

Patent Claims

1. A printer (1), in particular a printer of a tachograph for a motor vehicle, having a housing, a printing unit (4), a media unit (26) for accommodating the medium which is to be printed, which media unit (26) can be moved, relative to the printing unit, in a push-in direction (11) into an operating position and counter to the push-in direction (11) out of an operating position, and can be moved at least partly out of the housing, characterized in that the printing unit (4) can be moved in the housing within a movement play, and in that means for orienting the printing unit (4) with respect to the media unit (26) are provided, with the result that the printing unit (4) and the media unit (26) are oriented with respect to one another when the media unit (26) is pushed in in the push-in direction (11).

2. The printer as claimed in claim 1, characterized in that the media unit (26) has a carrier (10) which can be moved, relative to the printing unit, in a push-in direction (11) into an operating position and counter to the push-in direction (11) out of an operating position, and can be moved at least partly out of the housing.

3. The printer as claimed in claim 1, characterized in that the printing unit (4) can be moved in the housing, in the push-in direction (11) and counter to the push-in direction (11), to the extent of a substantially horizontal movement play.

4. The printer as claimed in claim 1, characterized in that the printing unit (4) can be moved in the housing, transversely with respect to the push-in direction (11), to the extent of a substantially horizontal movement play.

5. The printer as claimed in claim 1, characterized in that the printing unit (4) can be moved in the housing, transversely

with respect to the push-in direction (11), to the extent of a substantially vertical movement play.

5 6. The printer as claimed in claim 1, characterized in that the horizontal movement play transversely with respect to the push-in direction (11) is between 0.5 mm and 1.5 mm overall.

10 7. The printer as claimed in claim 1, characterized in that the horizontal movement play in the push-in direction (11) is between 0.5 mm and 1.5 mm overall.

8. The printer as claimed in claim 1, characterized in that the vertical movement play transversely with respect to the push-in direction (11) is between 0.5 mm and 1.5 mm overall.

15 9. The printer as claimed in claim 1, characterized in that the printing unit (4) is mounted in the housing in a floating manner.

20 10. The printer as claimed in claim 1, characterized in that the printer (1) has at least one elastic element (13) which presses the printing unit (4) counter to the push-in direction (11) with a force (14), with the result that the force (14) presses the printing unit (4) counter to the carrier (10) when 25 the latter is pushed in.

30 11. The printer as claimed in claim 1, characterized in that the elastic element (13) is configured in such a way that, when the media unit is not in the operating position, said elastic element (13) presses the printing unit (4) in the housing against stops which limit the movement play.

35 12. The printer as claimed in claim 1, characterized in that the printing unit (4) has a first contact region and the housing has a second contact region and, by means of the force

(14) of the elastic element (13), the printing unit (4) moves with the first contact region in the direction of the second contact region, in a rest position which is not the operating position, the first contact region bears against the second contact region and the printing unit (4) is clamped in this way between the elastic element (13) and the second contact region by means of the force (14) from the elastic element (13).

5 13. The printer as claimed in claim 1, characterized in that
10 the carrier has first contact faces, the printing unit (4) has second contact faces, and the first and second contact faces correspond with one another in such a way that, when the carrier (10) is moved in the push-in direction (11), the first contact faces come into contact with the second contact faces,
15 in each case in pairs.

14. The printer as claimed in claim 1, characterized in that
the printing unit (4) has at least one first centering element
20 (28) and the carrier (10) has at least one second centering element (29) which corresponds to the first centering element (28), with the result that, when the carrier (10) is moved in the push-in direction, the carrier (10) and the printing unit (4) are oriented in the housing by means of the centering elements (28, 29) in the operating position, relative to one
25 another in the spacing direction, and/or are centered in at least one direction perpendicular with respect to the spacing direction.

30 15. The printer as claimed in claim 1, characterized in that
the media unit (26) has a receptacle for the printing medium,
in particular for a paper roll, and a transport unit (8) for
the printing medium, in particular the paper of the paper roll.

16. The printer as claimed in claim 1, characterized in that the media unit (26) can be locked in an operating position in the housing by means of a locking unit (17).

5 17. The printer as claimed in claim 16, characterized in that the locking unit (17) has movable parts (18) which are constituent parts of the media unit (26) which are fastened to the media unit (26).

10 18. The printer as claimed in claim 16, characterized in that the locking unit (17) has stationary parts which are connected fixedly to the housing and interact in a locking manner with the movable parts (18) on the carrier (10).

15 19. The printer as claimed in claim 16, characterized in that the locking unit (17) has at least two holding elements which are arranged symmetrically with respect to the elastic element (13).

20 20. The printer as claimed in claim 16, characterized in that the movable parts interact with a sensor which senses a locked position, in which the media unit (26) or the carrier (10) and the printing unit (4) are fixed in the spacing direction with respect to one another, and/or an unlocked position, in which
25 the media unit (26) or the carrier (10) and the printing unit (4) are not fixed in the spacing direction with respect to one another.

21. The printer as claimed in claim 1, characterized in that,
30 in an operating position, the carrier (10) is sealed off with the housing as tightly as possible with respect to the surroundings.

22. The printer as claimed in claim 1, characterized in that
35 the printer has at least one guide which has at least two first

guide elements (19a, 19b) which are arranged on the carrier (10), and has two second guide elements (20a, 20b) which correspond with the first guide elements (19) on the carrier (10), with the result that the carrier (10) is guided by means
5 of the guide in the event of a movement in or counter to the push-in direction (11), and the second guide elements (20a, 20b) are fastened to a central connecting element (30).

23. A tachograph having the printer (1) as claimed in at least
10 one of the preceding claims.